UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,216	03/14/2001	Shinya Kobayashi	HO4-3303/HO	8566

30743 7590 01/17/2003

WHITHAM, CURTIS & CHRISTOFFERSON, P.C.
11491 SUNSET HILLS ROAD
SUITE 340
RESTON, VA 20190

EXAMINER
NGUYEN, LAM S

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 01/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/805,216	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	LAM S NGUYEN	2853	

-- The MAILING DATE of this communication appears on the cov r sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 October 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *2-11,13 and 14* is/are allowed.

6)☒ Claim(s) *12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/21/2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Drawings

The drawings are objected to because element 256 (FIG. 4), 1207 and 1501 (FIG. 15), 2000 (FIG. 20) should be 250, 1401, 406, and 2002, respectively. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Figure s 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: elements 201a in FIG. 4; 204 in FIG. 6; 211 in FIG. 7; 207, 207a, 312a in FIG. 8. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to because there should not have the inner connection between two electrodes of element 1901. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The indicated allowability of claim 12 is withdrawn in view of the newly discovered reference(s) to Wen et al. (US 6046822) and Momose et al. (EP 1023999 A2). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wen et al. (US 6046822) in view of Momose et al. (EP 1023999 A2).

Wen et al. discloses an image forming device comprising:

a head formed with a plurality of nozzles (FIG. 1a, element 47);

a converting unit (in term of "calibrator") that converts recording data (in term of "the pixel values") into driving data (in term of "waveform index numbers"), the driving data including data sets defining driving pulses for corresponding ones of the plurality of nozzles (column 1, line 66 to column 2, line 3);

a feed unit that feeds a recording medium in a first direction (FIG. 5: a feeder feeds the printing medium (element 120));

an ejection element (FIG. 1b, element 260) provided to each one of the plurality of nozzles (FIG. 1b, element 45) for ejecting an ink droplet (FIG. 1b, element 1b) from the corresponding nozzle onto the recording medium in response to the driving data while the feed unit is feeding the recording medium in the first direction; and

a memory that stores nozzle profile data (in term of "a droplet placement characteristic") (column 1, line 50-53: teaching a nozzle has a droplet placement characteristic associate therewith. Thus, there must be a memory to store this characteristic data such as Look-

Up-Table introduced in column 2, line 40-45)) including waveform data and timing data for each of the plurality of nozzles, the waveform data and the timing data (column 2, line 13-15) indicating a waveform and a generating timing, respectively, of the driving pulse for each one of the plurality of nozzles (column 1, line 50-57), wherein the converting unit converts the recording data into the driving data based on the nozzle profile data, and each of the driving pulses is defined by a plurality of data sets of the driving data (column 1, line 66 to column 2, line 3).

Wen et al. do not disclose the comprising of a leveling unit that levels generating timings of the driving pulses by changing the timing data of the nozzle profile data.

However, Momose et al. disclose the comprising of a leveling unit that levels generating timings of the driving pulses by changing the timing data of the nozzle profile data (FIG. 5, elements 56A-N).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to include the leveling unit that levels generating timings of the driving pulses by changing the timing data of the nozzle profile data as disclosed by Momose et al. into the forming image device disclosed by Wen et al. The motivation of doing so is to provide an ink jet recording apparatus intended for preventing a record image failure such as missing dots in order to gain printing quality as taught by Momose et al. (column 1, line 1-7).

Allowable Subject Matter

2. Claims 2-11, 13, 14 are allowed.

Referring to claims 2, 3: The most pertinent arts Wen et al. (US 6046822) and Momose et al. (EP 1023999 A2) fail to disclose the comprising of a designating unit that designates a

target ink amount of the ink droplet and a target impact position on the recording medium on which the ink droplet impacts; a measuring unit that measures a distance between the target impact position and an actual impact position on the recording medium where the ink droplet has impacted with respect to the first direction; and an updating unit that updates the nozzle profile data based on the target impact position and the distance measured by the measuring unit. Therefore, the claimed invention is not disclosed by the prior arts.

Referring to claim 13: The most pertinent art Wen et al. (US 6046822) and Momose et al. (EP 1023999 A2) fail to disclose the comprising of a resolution changing unit that changes a time resolution, wherein each one of the plurality of data sets of the driving data having an original time resolution, and the resolution setting unit that sets the original time resolution of each of the data sets to a predetermined time resolution and wherein the original time resolution determines the waveform of each of the driving pulses, and the predetermined time resolution determines the generating timing of each of the driving pulses. Therefore, the claimed invention is not disclosed by the prior arts.

Referring to claims 4-11 and 13, 14: Allowed since their dependence on the allowed claims 3 and 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BARLOW can be reached on (703)308-3126. The fax phone numbers for

the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN

January 13, 2003

John Barlow
Supervisory Patent Examiner
Technology Center 2800